MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2019/2020

PBC0016–BASIC COMPUTING AND PROGRAMMING

(Foundation in Engineering)

28 FEBRUARY 2020
3.00 p.m. - 5.00 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This question paper consists of **FOUR** printed pages with **FOUR** questions.
2. Answer **ALL** questions.
3. Write your answers in the Answer Booklet.

Question 1

(a) In recent years, the size of computers have become smaller. Describe how this miniaturization affects the computer processing speed and storage capacity. [4 marks]

(b) Define the term green computing and describe **TWO (2)** strategies to support green computing. [2 + 4 marks]

(c) There are four steps of machine cycle.
(i) Briefly define the term 'machine cycle'.
(ii) Describe the four steps of machine cycle when a student enters a math problem into the memory of a computer.
[1 + 8 marks]

(d) Memory is one of the components in a computer. Describe in detail what memory consists of and the **THREE (3)** basic categories of items stored in a computer memory. [3 + 3 marks]

Question 2

(a) Briefly describe how the following biometrics technology works.
(i) Fingerprint scanner
(ii) Iris recognition system
(iii) Voice verification system
[6 marks]

(b) Distinguish between a bar code reader and an RFID reader. [4 marks]

(c) Give an example of how an operating system interact with a computer user, an application and hardware. [6 marks]

(d) With suitable examples, describe **THREE (3)** types of application software that can assist the work of a lecturer in a university. [6 marks]

(e) Define the term 'bit rate'. In terms of bit rate, how can we get a better sound quality? [1 + 2 marks]

Question 3

(a) Briefly describe the following types of modem:
(i) Dial up modem
(ii) Digital modem
(iii) Wireless modem [6 marks]

(b) Determine the amount of storage needed (in GB) to store a 3 hours video if 20 seconds of video is approximately 5 MB. [3 marks]

Continued ....

Question 3 (continued)

(c) Compare **TWO (2)** differences between infrared transmission and microwave transmission. [4 marks]

(d) Describe the term personal area network (PAN). (Note: Your answer should include definition of PAN, types of devices used in a PAN and the technology used in a PAN). [4 marks]

(e) Transmission control protocol/internet protocol (TCP/IP) is a network communication standard for internet communications.
(i) Why is it important to have network communication standards?
(ii) Describe **THREE (3)** functions of TCP/IP. [2 + 6 marks]

Question 4

(a) Name **THREE (3)** fundamental data types, which all C compilers accept. [3 marks]

(b) Describe the function of **printf** and **scanf** in a C program. [4 marks]

(c) Identify and correct **FIVE (5)** errors in the following C program. You must state the line number where the error occurs. (Note: There are more than five errors in the program). [5 marks]

```
1    #include <studio.h>
2
3    int main {}
4    (
5        int k, case=1;
6
7        for (k=0;k<case;k++)
8        (
9         scanf("%f\t",k);
10        printf("%c\t",k*k);
11       )
12       return 0;
13    )
14
```

(d) Write a C program using the **do-while** statement that prints the following output: [5 marks]

```
10    11    12    13    14
```

Continued ....

Question 4 (continued)

(e) Table Q4 shows the fuel price per liter for three types of fuel.

Fuel type	Price per liter (RM)
A	2.08
B	2.64
C	2.18

Table Q4: Fuel type and its price per liter

Write a program that will calculate the total price of fuel. Your program will prompt the user to enter the fuel type and the amount of fuel (in liter) required. The program then displays the total price of the fuel. If the user enters a fuel type that is not A, B or C, the program will display 'Please enter a fuel type of either A, B or C'. Sample outputs are shown in Figure Q4.

```
Type of fuel: A
Amount of fuel (in liter): 30

Total price of fuel = RM 62.40
```

```
Type of fuel: D
Amount of fuel (in liter): 30

Please enter a fuel type of either A, B or C.
```

Figure Q4: Sample Outputs (**Bold and underlined** denotes user's input)

[8 marks]

End of Paper